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DIGITALISATION OF EDUCATION AND COGNITIVE LOAD: NEUROPHYSIOLOGICAL CHALLENGES FOR HIGHER EDUCATION INSTITUTIONS IN THE 21ST CENTURY

ЦИФРОВІЗАЦІЯ ОСВІТИ І КОГНІТИВНЕ НАВАНТАЖЕННЯ: НЕЙРОФІЗІОЛОГІЧНІ ВИКЛИКИ ДЛЯ ЗВО У XXI СТОЛІТТІ

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ABSTRACT

*The **purpose** of the article is to analyse the impact of the digital transformation of education on the cognitive load of students of higher education institutions, taking into account neurophysiological factors.*

***Methodology.** The study used general scientific methods (analysis, synthesis, comparison, generalisation, systematisation) to study the scientific literature on the issue. The methodological basis is an interdisciplinary approach that combines pedagogical experience, neuropsychology, and cognitive ergonomics. The empirical part of the study contains the results of a survey of 50 students from V.G. Korolenko Poltava National Pedagogical University, Ukraine. We also used comparative analysis, structural methods and modelling of the integration of Cyber-Human Systems technologies into the educational process.*

***Results.** The analysis of the survey results shows that the vast majority of respondents consider the digital learning format to be a factor in increasing cognitive and psycho-emotional stress. This way, 80% of participants noted its increase compared to traditional forms, which correlates with the findings of neuropsychological studies on the negative impact of multichannel information delivery and high content dynamics on attention span and brain performance. At the same time, 76% of respondents acknowledged the positive impact of digital learning on the development of creativity and critical*

***Мета** – аналіз впливу цифрової трансформації освіти на когнітивне навантаження студентів закладів вищої освіти з урахуванням нейрофізіологічних чинників.*

***Методологія.** У дослідженні використано загальнонаукові методи (аналіз, синтез, порівняння, узагальнення, систематизація) для опрацювання наукової літератури з означеної проблеми. Методологічною основою є міждисциплінарний підхід, що поєднує напрацювання педагогіки, нейропсихології, когнітивної ергономіки. Емпірична частина дослідження містить результати опитування 50 студентів Полтавського національного педагогічного університету імені В. Г. Короленка, Україна. Також нами використано компаративний аналіз, структурний метод та моделювання інтеграції технологій Cyber-Human Systems в освітній процес.*

***Результати.** Аналіз результатів опитування свідчить про те, що переважна більшість респондентів вважає цифровий формат навчання чинником підвищення когнітивного та психоемоційного навантаження. Так, 80% учасників відзначили його зростання порівняно з традиційними формами, що корелює з висновками нейропсихологічних досліджень про негативний вплив багатоканальної подачі інформації та високої динаміки контенту на стійкість уваги та працездатність мозку. Водночас 76% опитаних визнали позитивний вплив цифрового навчання на розвиток креативності та критичного мислення, що*

thinking, which is explained by the possibility of using interactive platforms, project work, and problem-based research tasks. The most effective strategies for reducing cognitive load are the use of interactive methods (41%) and a rational balance between work and rest (32%). Reducing the duration of classes (15%) and psychological support of teachers (12%) are considered as secondary, but no less important measures.

Conclusions. *We have found based on the theoretical analysis and empirical results of the study that the process of digitalisation of education in higher education institutions is accompanied by significant neurophysiological challenges associated with an increase in the cognitive load on higher education students. The identified trends make it possible to understand the need for a rational, systematic approach to determining the volume, structure, and pace of the educational material, taking into account the recommendations of modern cognitive psychology and neurophysiology. Only under the specified conditions it is possible to create an effective and safe educational space for students.*

Keywords: *digitalisation of education, cognitive load, neuropedagogy, neuropsychological resilience, digital educational tools, educational system, critical thinking, creativity, systematic approach.*

пояснюється можливістю використання інтерактивних платформ, проєктної роботи, проблемних дослідницьких завдань. Найбільш ефективними стратегіями зниження когнітивного навантаження респонденти вважають використання інтерактивних методів (41%) та раціональне співвідношення режиму роботи і відпочинку (32%). Зменшення тривалості занять (15%) та психологічна підтримка викладачів (12%) розглядаються як другорядні, але не менш важливі заходи.

Висновки. *На підставі теоретичного аналізу та емпіричних результатів дослідження нами з'ясовано, що процес цифровізації освіти у закладах вищої освіти супроводжується суттєвими нейрофізіологічними викликами, пов'язаними із зростанням когнітивного навантаження на здобувачів вищої освіти. Виявлені тенденції дозволяють зрозуміти потребу у раціональному, системному підході до визначення обсягу, структури, темпу подачі навчального матеріалу з урахуванням рекомендацій сучасної когнітивної психології та нейрофізіології. Лише за вказаних засад можливе формування ефективного та безпечного освітнього простору для студентів.*

Ключові слова: *цифровізація освіти, когнітивне навантаження, нейропедагогіка, нейропсихологічна стійкість, цифрові освітні інструменти, освітня система, критичне мислення, креативність, системний підхід.*

INTRODUCTION

The current digital transformation of society has radically changed not only the technical but also the conceptual foundations and functionality of the educational space. The use of digital platforms, online communication, and automated learning management systems opens up new horizons for a personalised approach, accessibility, and mobility in education. At the same time, significant information flows, constant changes in the context of tasks, and the need to simultaneously maintain attention on several channels all require a high level of self-regulation and resilience from higher education students, testing their cognitive and neurophysiological abilities. These facts convincingly demonstrate the relevance of analysing the above-mentioned challenges of the modern educational process.

Recent research in the fields of neuropedagogy, digital education, and cognitive sciences demonstrates the active development of an interdisciplinary approach to the organisation of the educational process in the context of digital transformation. In the works of Bakhmat N., Navrotska I. (2024) and Bludova Yu., Ilyina O. (2024), researchers focus on the possibilities of introducing neuropedagogical technologies by future teachers, emphasising their potential in improving the effectiveness of knowledge acquisition and the development of creative abilities in students. The scientific work of I.

Buzhina, M. Imeridze and O. Kuzmenko (2023) detail the problems and prospects of using innovative technologies in higher education, while Kuznetsova O., Fazan V. and Stefan L. (2024) analyse the features of introducing software with elements of artificial intelligence into the educational process.

A significant contribution to the formation of the conceptual foundations of neuropedagogy was made by Korobkina T., Dashenkova N. (2025), who examined the phenomenon of 'trust education' and a safe learning environment in conditions of uncertainty, as well as Yasyuk I. (2024), who outlined new approaches to teaching foreign languages based on brain-oriented learning. In turn, Romanovsky O. and co-authors (2024) focused on the peculiarities of ICT application in legal education, emphasising the importance of industry specificity in the implementation of digital solutions.

The international scientific discourse, represented by the works of Basso D., Cottini M. (2023), Ghoulam K., Bouikhalene B. (2024), Jackson E., Jackson H. (2024), Popovich A., Aliyeva O. (2024), Roozafzai Z. (2024) and Yurchenko V., Nalyvaiko O. (2025), broadens the context of study by analysing the impact of mobile technologies, artificial intelligence tools, digital platforms, and neuropsychological approaches on students' learning outcomes and cognitive abilities. At the same time, Kidd J. and co-authors (2024) emphasise the importance of brain research for improving teaching practices and understanding the individual characteristics of students.

Together, these studies demonstrate scientists' search for a balance between technological innovations and cognitive abilities, as well as the need to integrate the principles of neuropedagogy, cognitive ergonomics, and psycho-emotional well-being into the structure of the educational process.

METHODOLOGY

The study used general scientific methods (analysis, synthesis, comparison, generalisation, systematisation) to study the scientific literature on the issue. The methodological basis is an interdisciplinary approach that combines the pedagogical experience, neuropsychology, and cognitive ergonomics. The empirical part of the study contains the results of a survey of 50 students from V. G. Korolenko Poltava National Pedagogical University. We also used comparative analysis, structural methods, and modelling of the integration of Cyber-Human Systems technologies into the educational process.

RESULTS

Current research in neuroscience shows that the impact of digital technologies on brain function is multi-structured and ambiguous. On the one hand, prolonged exposure to the multitasking information environment for digital learning can reduce the ability to concentrate steadily and for long periods of time, complicate the transition to deeper levels of information processing, and contribute to the dominance of superficial, reactive forms of thinking. This cognitive reaction is associated with frequent shifts in attention, fragmented presentation of material, an excess of external stimuli, and a lack of structured internal processing of information. In the long term, such conditions can form habits of clip-based information processing, a decrease in the ability to concentrate for long periods of time, and at the same time cognitive fatigue (Popovich & Aliyeva, 2024).

The unique property of the human brain, neuroplasticity, deserves special attention. It provides the ability to adapt to new conditions of functioning by restructuring synaptic connections, changing the activity of certain brain structures, and forming new neural circuits. All of the above are important tools for cognitive development. In particular,

interaction with digital educational technologies, when properly organised within a pedagogical model, stimulates the development of executive brain functions: planning, self-control, cognitive flexibility, and decision-making, which are fundamental skills for individuals in the modern world (Ghoulam & Bouikhalene, 2024).

In addition to the above, the digital environment activates metacognitive skills. This refers to awareness of one's own cognitive processes, learning strategies, and evaluation of the results of cognitive activity. Engaging with digital content requires students to develop skills in critical analysis, comparison, and verification of information, as well as the ability to reflect and think logically and analytically. At the same time, skills for the effective management of cognitive resources are improved. That is why we have reason to consider digital technologies as trainers for the cognitive brain, provided that they are used not as a passive channel of transmission, but as an interactive environment that is a significant stimulus for students' mental activity (Bakhmat & Navrotska, 2024).

Neurophysiological data confirm that systematic work with adaptive digital platforms that combine multimodal sources stimulates the sensorimotor, visual-spatial, and verbal-logical areas of the brain. These processes activate neural networks and form new connections (Yasiuk, 2024). This leads to the development of flexible thinking and the careful analysis of changing conditions, which indicates the optimisation of cognitive functioning.

It is worth emphasizing that the digital environment creates conditions for the individualisation of cognitive activity. The active implementation of these tools allows students to move at their own pace, adapt the volume and format of information to their own learning style, which naturally reduces the likelihood of overload and promotes the formation of sustainable cognitive strategies (Buzhyna, Imeridze & Kuzmenko, 2023).

Under these conditions, an educational environment that takes into account the principles of neuropsychological understanding of cognitive activity plays a decisive role in ensuring that digital technologies do not become a source of overload, but are an active resource for the development of cognitive stability and the proper mental state of students (Kuznetsova, Fazan & Shtefan, 2024).

A fundamental factor in the effectiveness of digital learning is the correlation of educational content with the functional capabilities of the individual's brain. In this context, neuropedagogy plays a primary role – a new field of interdisciplinary knowledge that combines the achievements of pedagogy, psychology, neurophysiology, and cognitive science (Bludova & Ilina, 2024).

The neuropedagogical approach allows the development of teaching practices that correspond to the natural rhythms of brain activity, the characteristics of attention, memory, and emotional processing of information of each individual (Kidd, Kaufman, Baker, O'Shea, Dwight & Old Dominion U students, 2024).

For example, it has been proven that adult students can maintain active attention for no more than 20–25 minutes, after which they need to switch activities or take a break. In a digital environment, this means that long video lectures without dynamic changes in the presentation of material are ineffective. Instead, dividing content into modules with interactive inserts (tests, exercises, visualisations) activates attention and reduces cognitive load.

Similarly, the use of multimodal tools (text + sound + images) should be designed in such a way as not to overload the channels of perception, but to enhance the understanding of the information received in the educational space (Shrahina, 2016).

Among the many tasks of higher education institutions, the social and emotional context in the digital environment deserves attention. This can be achieved through online support groups, active forums, regular feedback from teachers, and the use of game-based interaction elements (Romanovskyi et al., 2024).

It is also important to focus on individualising the cognitive load. After all, each student has their own cognitive style, speed of thinking, and level of mental ability. Therefore, the use of digital tools should be focused on developing material that adapts to the level of complexity and the most acceptable format of perception for a particular student. These solutions should be implemented operationally through adaptive platforms, artificial intelligence, and educational analytics, which allow the formation of a learning profile for a particular student (Yurchenko & Nalyvaiko, 2025; Jackson & Jackson, 2024).

The excessive influence of visual and audio information on students poses a certain threat to their mental state. According to neuropedagogical research, the brain processes information more efficiently when there is a clear structure, sequence, and calm rhythm of perception. Digital platforms, on the contrary, often cause chaotic activation of various sensory zones, which essentially makes it impossible to deeply consolidate knowledge in one's long-term memory. This style of learning, focused primarily on external stimulation, contributes to the formation of a 'clip consciousness,' characterised by fragmentation, superficiality, and a reduced ability to generalise and form a coherent picture of the world.

It is equally important to consider the circadian rhythms of the brain, which determine daily fluctuations in cognitive activity, attention span, performance, and readiness to learn. Disruptions to these rhythms, which can be caused by the constant availability of digital content and online communication, blur the boundaries between phases of activity and recovery.

This has an extremely negative effect on cognitive functioning. At the same time, the use of screens in the evening and at night suppresses the production of melatonin, a hormone that regulates sleep and brain recovery processes. This, in turn, reduces sleep quality, slows down memory consolidation, impairs concentration and leads to general cognitive exhaustion (Basso & Cottini, 2023).

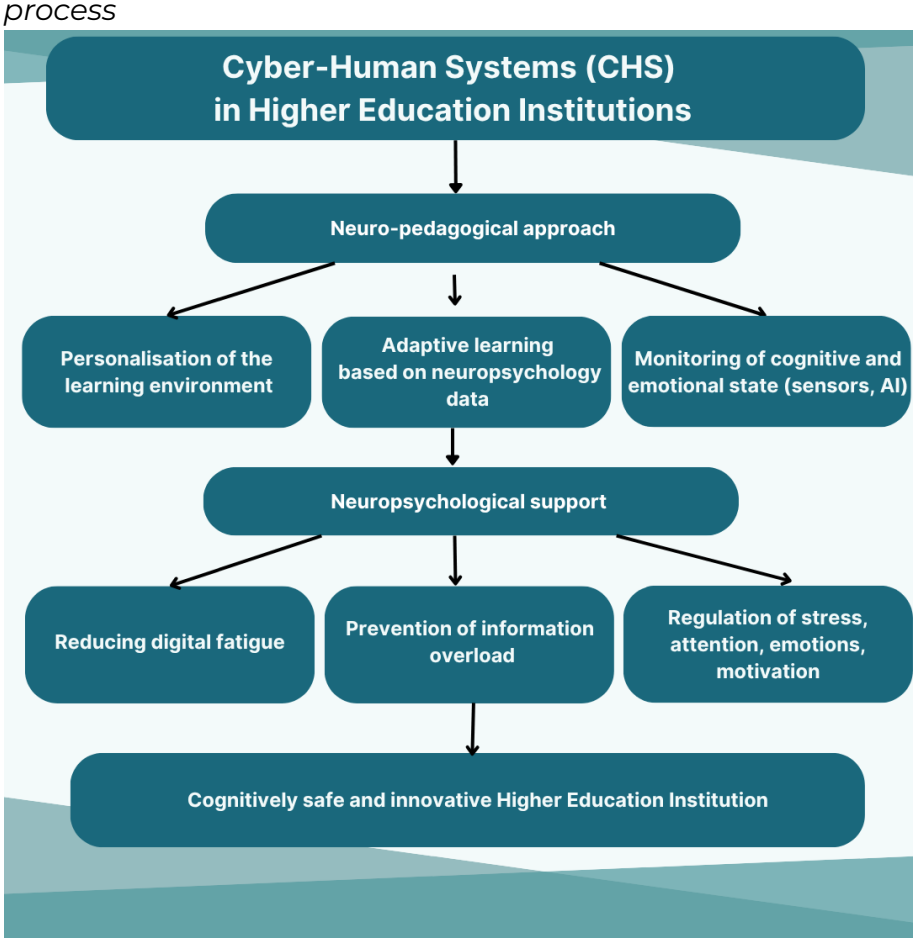
It is also important to consider the changing mechanisms of motivation for learning. One of the features of the digital environment is the ability to obtain quick results, visual reinforcement, 'likes,' and points. This mechanism forms a motivation for instant gratification, which conflicts with academic motivation, which is focused on long-term goals, internal self-realisation, and deep meaningful engagement.

In view of the above, there is a need for a neuropsychological adaptation of the digital educational environment, which should be based on the following fundamental principles: reduction of information noise and optimisation of the presentation of educational content; rational regulation of periods of digital activity and recovery; development of cognitive self-regulation skills in students; consideration of biorhythms and neuro-individual characteristics of students; neuropedagogical training of teachers to work in mixed and digital formats.

Based on the analysis and generalisation of the materials studied, we have developed a conceptual model for the integration of Cyber-Human Systems (CHS) technologies into the educational process, focused on the harmonious combination of digital tools with the cognitive and emotional resources of the individual (Figure 1).

Figure 1

Conceptual model of integrating Cyber-Human Systems (CHS) technologies into the educational process



The central element of the proposed model is a neuropedagogical approach, which involves the transformation of neuropsychological data into pedagogically relevant solutions aimed at optimising educational interaction and improving the effectiveness of knowledge acquisition. Within this approach, three key areas should be highlighted: personalisation of the learning environment, adaptive learning based on neuropsychological data, and monitoring of cognitive and emotional states.

Personalisation involves the development of individual educational trajectories taking into account the cognitive characteristics, learning style, and previous experience of learners. This can be achieved by building student profiles using educational analytics tools. Adaptive learning provides the dynamic modification of content, complexity, and pace of presentation according to current cognitive and emotional indicators, using data from continuous monitoring of behavioural and, if necessary, biometric parameters.

Monitoring of cognitive and emotional states involves systematic tracking of attention, stress levels, signs of information overload and other psychophysiological markers for the timely detection of risk states and the prompt initiation of corrective measures (Korobkina & Dashenkova, 2025).

All of the above areas are integrated into the neuropsychological support unit. Its main areas of focus are reducing digital fatigue by optimising the duration and intensity of training sessions; preventing information overload by forming a rational architecture of educational material and applying the principles of gradual information delivery; regulating stress, attention, emotions, and motivation using cognitive-behavioural

support methods, emotional self-regulation exercises, biological feedback technologies, and pedagogical mentoring (Roozafzai, 2024).

The ultimate goal of implementing this model is to create a cognitively safe and innovative learning environment characterised by a high level of knowledge acquisition while maintaining the proper mental state of learners. Overall, the diagram demonstrates a multi-level strategy for implementing CHS, which integrates neuropedagogical principles, adaptive technologies, and psychohygienic interventions, creating a foundation for the balanced development of the cognitive and emotional resources of all participants in the educational process.

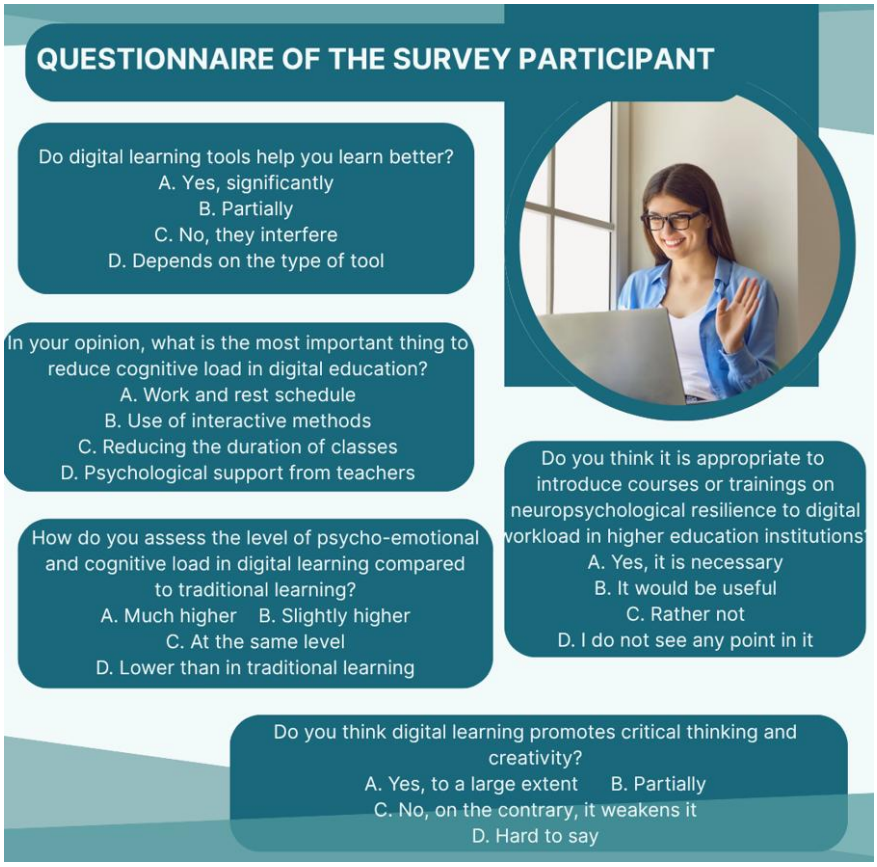
In order to understand the attitude of participants in the educational process towards the impact of digital learning on cognitive load, emotional well-being, and mental activity, as well as to identify potential difficulties, we conducted a survey among 50 students from V.G. Korolenko Poltava National Pedagogical University.

The questionnaire we developed contains five aspects, each of which is an important area of neuropsychological analysis of digital learning: the subjective assessment of psycho-emotional and cognitive load; the impact of the digital environment on creativity and critical thinking; an analysis of factors that reduce cognitive load; an assessment of the effectiveness of digital educational tools; the need for courses on neuropsychological resilience.

The survey aims to perform three functions simultaneously: diagnostic – it reveals the current state and subjective perception of students regarding the impact of digitalisation on cognitive processes; prognostic – it allows determining the directions of development of educational technologies and measures to support mental resilience; validation – it confirms the scientific hypothesis of the study and correlates with data from international and domestic neuropsychological studies (Figure 2).

Figure 2

Questionnaire of the survey participant



The survey revealed characteristic features of the perception of psycho-emotional and cognitive load in digital learning environments and assessed its impact on the development of critical thinking and creativity.

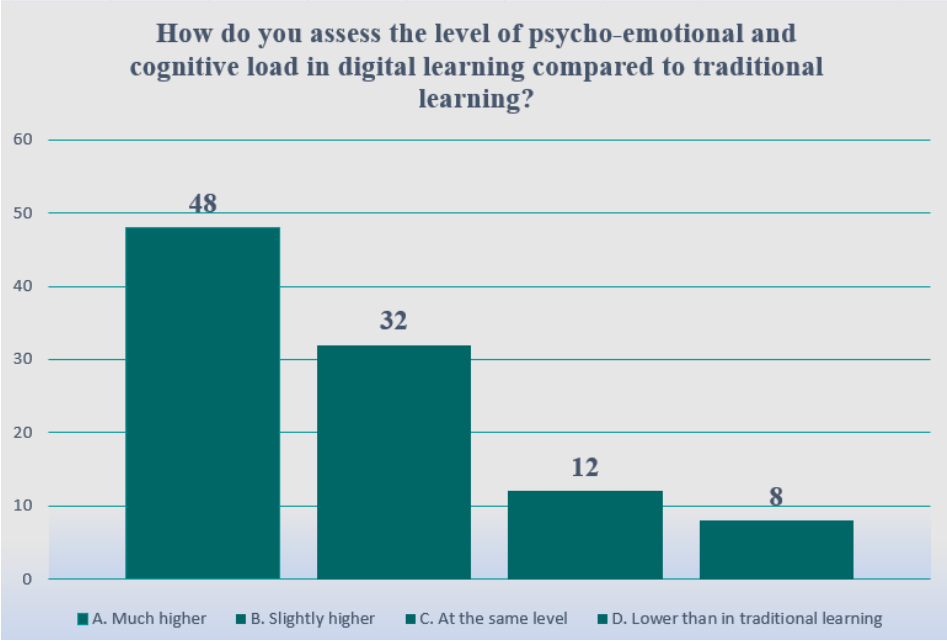
To the first question, most respondents (48%) chose the option 'Significantly higher', while 32% answered that the load was 'Slightly higher'. This way, 80% of the survey participants noted that the digital format of education is accompanied by an increase in cognitive and psycho-emotional stress.

Only 12% consider the workload to be unchanged, and 8% are convinced that it has even decreased compared to traditional learning (Figure 3).

The results confirm the findings of modern neuropsychology, according to which multichannel information delivery, the combination of learning tasks with constant communication signals, and the high speed of content change lead to increased stress and brain fatigue.

Figure 3

How do you assess the level of psycho-emotional and cognitive load in digital learning compared to traditional learning?



To the second question, 31% of respondents answered affirmatively, 'Yes, to a large extent,' while another 45% noted that digital educational practices partially stimulate the development of higher-level thinking.

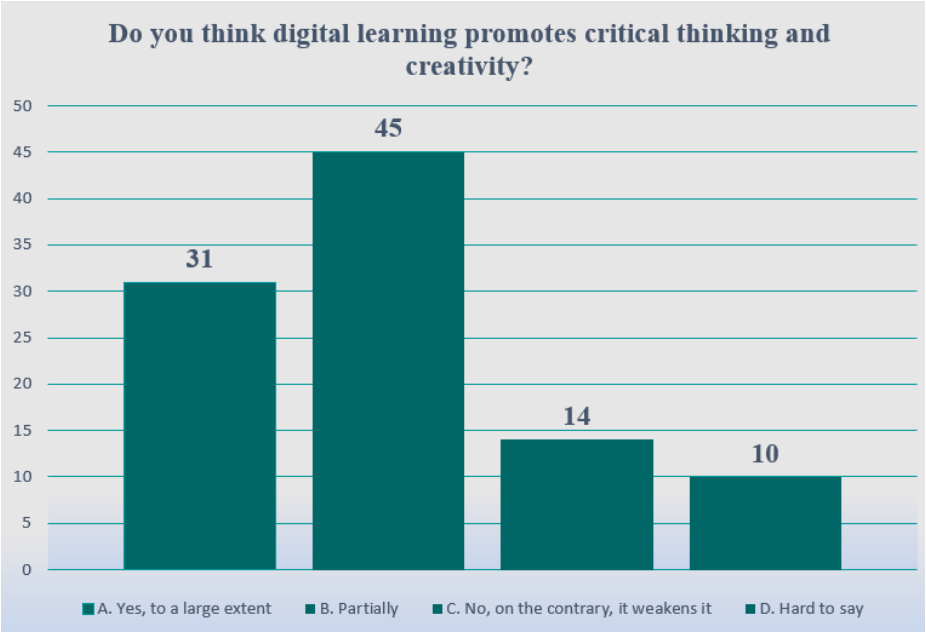
This way, 76% of participants recognise the positive impact of digital learning on the development of creativity and critical thinking.

Only 14% believe that digital technologies weaken these qualities, and 10% were unable to decide on an answer (Figure 4).

The results obtained demonstrate a growing need for the active use of digital tools: visualisation platforms, online projects, and research tasks. They contribute to the development of analytical thinking, independent information search skills, and the ability to make non-standard decisions.

Figure 4

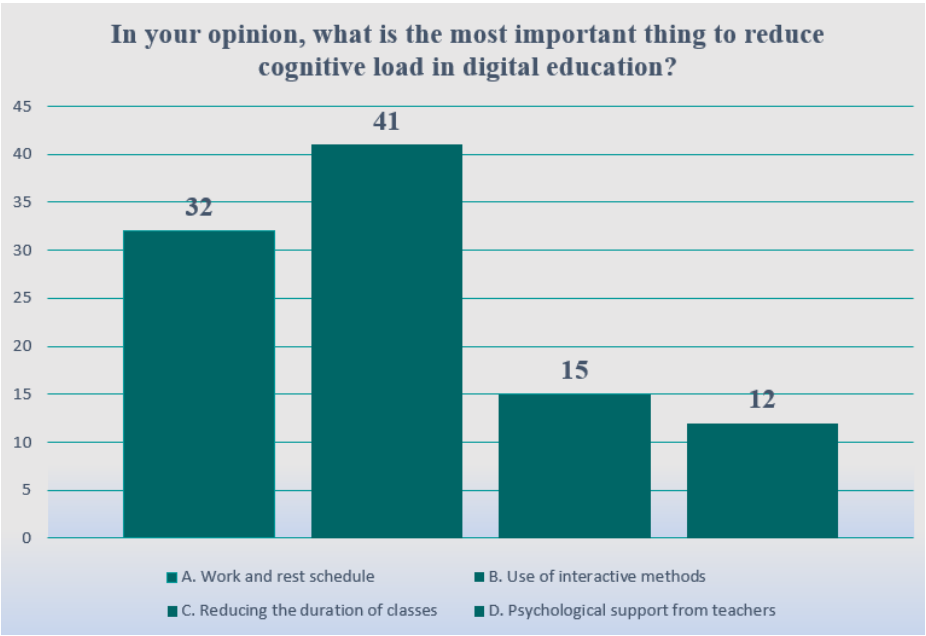
Do you think digital learning promotes critical thinking and creativity?



According to respondents, cognitive load can be reduced through the use of interactive teaching methods (41%). Equally important is the issue of regulating work and rest schedules (32%), which reflects the students' awareness of the importance of a balanced organisation of the educational process. Options for reducing the duration of classes (15%) and psychological support for teachers (12%) have slightly less but noticeable support, indicating their role as additional rather than primary strategies (Figure 5).

Figure 5

In your opinion, what is the most important thing to reduce cognitive load in digital education?

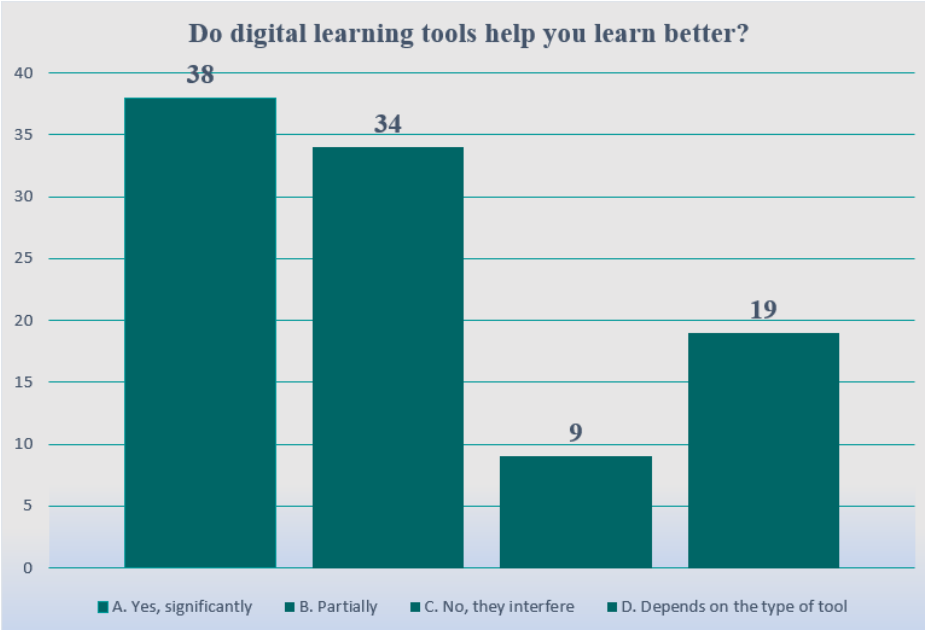


Analysis of responses to the fourth question shows a generally positive attitude towards digital educational tools: 72% of respondents believe that they significantly or partially contribute to the assimilation of material. At the same time, almost a fifth of respondents (19%) emphasis that the effectiveness of these tools is determined by their quality and

relevance to educational goals. Only 9% of students note a negative impact of digital technologies on the process of effective learning (Figure 6).

Figure 6

Do digital learning tools help you learn better?

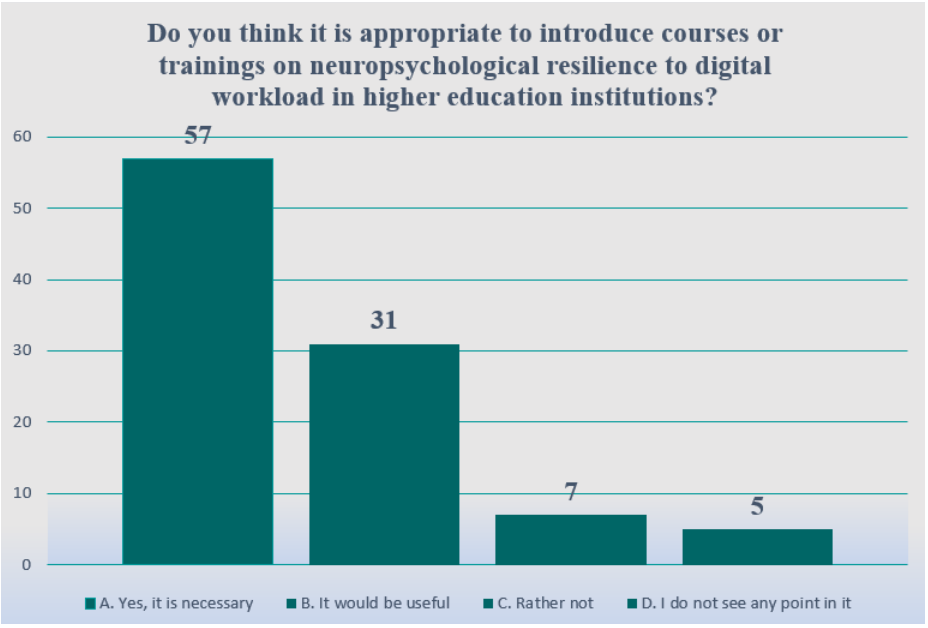


Regarding the feasibility of introducing courses or training on neuropsychological resilience to digital overload in higher education institutions, the vast majority of respondents (88%) support this idea. This indicates a high level of awareness among students of the impact of the digital environment on cognitive and emotional stress, as well as a willingness to take preventive measures to support mental health.

Only 12% of respondents expressed scepticism ('Rather no' and 'I don't see the point') to training, which is probably due to either a lack of understanding of the content of such programmes or a lack of personal experience with overload (Figure 7).

Figure 7

Do you think it is appropriate to introduce courses or trainings on neuropsychological resilience to digital workload in higher education institutions?



The summary of the survey results allows us to conclude that digital learning is perceived by higher education students as a factor of increased psycho-emotional and cognitive stress. At the same time, a significant proportion of respondents acknowledge that, provided a rational pedagogical strategy is developed and digital tools are used in a targeted manner, it has significant potential for developing critical thinking and creativity. This indicates the need to implement systematic approaches to the digital transformation of education, taking into account the cognitive abilities of students, the development of teachers' digital competence, and the integration of methods that stimulate cognitive activity.

At the same time, the results of the study confirm that students consider interactive methods and rational planning of study time to be the most effective strategies for reducing cognitive load. In most cases, digital educational tools are a factor in improving the quality of education, provided that they are used methodically and adapted to the needs of learners. This highlights the need for the optimal integration of pedagogical innovations into the educational process, which should be focused on supporting students' cognitive activity and psycho-emotional well-being.

Most students also interpret digital tools exclusively as a means of improving the quality of knowledge acquisition. Further improvement of the digital educational environment should be based on a personalised approach and a methodically sound selection of the most optimal resources.

The vast majority of students support the idea of introducing courses on neuropsychological resilience. This indicates that such courses should become an effective tool for preserving cognitive resources, developing self-regulation skills, and improving the academic performance of students in a digital learning environment.

In addition to the above, it is important to note that the results obtained have scientific value for practical application. This applies to the development of: comprehensive strategies for maintaining information balance in the educational environment; programmes to prevent cognitive exhaustion of participants in the educational process; training courses on neuropsychological self-regulation aimed at improving students' adaptive abilities in a digital format; methodological recommendations for teachers on the optimal structuring of digital educational content, taking into account the limitations of working memory, mechanisms of concentration, and the speed of information processing.

This way, the results obtained show that the digitalisation of education has potential not only as a tool for imparting knowledge, but also as a factor in the development of students' cognitive and creative abilities, provided that it is rationally adapted to the neuropsychological characteristics of the brain.

DISCUSSION

The debate on the impact of digitalisation of education on the cognitive load in higher education institutions and related neurophysiological challenges covers a number of controversial aspects that reflect different scientific approaches and practical priorities.

On the one hand, a group of researchers considers the digital environment as a powerful tool for expanding educational opportunities. It is argued that interactive platforms, adaptive learning management systems, multimedia content and online communication ensure personalisation of the learning process, increase its flexibility, allow integration of the latest visualisation and modelling methods, and promote the

development of independent knowledge acquisition skills. Scientists are convinced that it is the integration of digital technologies into the educational process that reduces excessive cognitive load by adapting the material to the individual capabilities of the student, using microlearning algorithms that greatly facilitate the assimilation of information, and automatic feedback tools.

On the other hand, there are warnings about the potentially negative impact of the digital environment on the cognitive development of individuals. Scientists note that constant access to information, multimodality of content presentation, and the presence of a large number of parallel channels of interaction can lead to the fragmentation of attention, superficial thinking, and a decrease in the ability to deeply concentrate and do systematic analysis. It is emphasised that excessive cognitive load caused by the rapid pace of information flows can contribute to the development of chronic digital fatigue, emotional exhaustion, and circadian rhythm disorders.

The results of our study generally confirm the conclusions of those researchers who emphasise the dual nature of the impact of digitalisation: on the one hand, it opens up opportunities for greater individualisation and efficiency in learning, and on the other, it creates risks of excessive workload and reduced cognitive resilience among students.

Similar trends have been noted by other authors: some researchers point out a reduction in cognitive barriers through the use of adaptive learning technologies and interactive tools (which coincides with our findings), while others emphasise the threats of digital overload and the need to rationally combine traditional and innovative methods (which is also revealed in our analysis).

So, our results are not uniquely different, but rather fit into the general trend of contemporary scientific discussions, demonstrating both confirmation of the positive effects of digitalisation and confirmation of concerns about its possible risks to the cognitive and psychophysiological state of students. This indicates the need for further comprehensive research aimed at finding the optimal balance between digital innovation and cognitive well-being.

CONCLUSIONS

Based on our theoretical analysis and empirical research results, we have found that the process of digitalisation of education in higher education institutions is accompanied by significant neurophysiological challenges associated with an increase in cognitive load on higher education students. The identified trends allow us to understand the need for a rational, systematic approach to determining the volume, structure, and pace of the presentation of educational material, taking into account the recommendations of modern cognitive psychology and neurophysiology. Only under these conditions is it possible to create an effective and safe educational space for students.

The analysis of the survey results shows that the vast majority of respondents consider the digital format of learning to be a factor in increasing cognitive and psycho-emotional load. This way, 80% of participants noted its increase compared to traditional forms, which correlates with the conclusions of neuropsychological studies on the negative impact of multi-channel information delivery and high content dynamics on attention span and brain performance.

At the same time, 76% of respondents recognised the positive impact of digital learning on the development of creativity and critical thinking, which is explained by the possibility of using interactive platforms, project work, and problem-based research

tasks. Respondents consider the use of interactive methods (41%) and a rational balance between work and rest (32%) to be the most effective strategies for reducing cognitive load. Reducing the duration of classes (15%) and psychological support from teachers (12%) are considered secondary but no less important measures.

The vast majority (72%) of respondents note that digital tools facilitate the assimilation of material, and their effectiveness depends on their quality and relevance to educational goals. The idea of introducing courses and training on neuropsychological resilience gained support among the students surveyed (88%). This indicates a high level of awareness of the risks of digital overload and a readiness for preventive measures to support mental health.

CONFLICT OF INTERESTS

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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